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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SRIRAM DEVANATHAN, JEFFREY ALLEN MOORE, JOSEPH PETER STEFANIAK, and LONNIE DALE SULGROVE

Appeal 2008-004717
Application 10/716,287[1]
Technology Center 2100

Decided:[2] May 28, 2009

Before JEAN R. HOMERE, THU A. DANG, and STEPHEN C. SIU, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Filed on November 18, 2003. The real party in interest is Citibank N.A.
[2] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1, 3 through 21, 23 through 41, and 43 through 60. Claims 2, 22, and 42 have been cancelled.[3] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Appellants' Invention

Appellants invented a method, system, and computer-readable medium for hierarchically converting the physical aspects of a common warehouse model ("CWM") into design elements for a relational database. (Spec. 3, ll. 1-7; Spec. 6, ll. 1-6; Spec. 19, ll. 16-18.) In particular, Figure 12 depicts a flowchart of the process (1200). (Spec. 19, ll. 16-18.) The physical aspects of the CWM comprise relational catalogs and each relational catalog comprises relational schemas. (Spec. 19, ll. 19-20.) The corresponding database management system ("DBMS") comprises DBMS catalogs and each of the DBMS catalogs comprises DBMS schemas. The process (1200) scans through the relational catalogs for a specific catalog (1202). (Spec. 19, l. 27; Spec. 20, ll. 7-8.) If the relational catalog does not exist (1204), the process (1200) terminates. (Spec. 20, ll. 8-9.) If the relational catalog does exist (1204), it is scanned and the process creates a corresponding DBMS catalog to be outputted to the DBMS (1206). (Spec. 19, ll. 27-29; Spec. 20, ll. 9-10.) Further, for each relational catalog, the process (1200) scans through each relational schema (1208). (Spec. 20, ll. 10-11.) If the relational schema does not exist (1212), the process goes back

[3] Application No. 10/716,286 filed on November 18, 2003, contains a common description.

to step 1204. (Spec. 20, ll. 12-14.) If the relational schema does exist (1210), the process (1200) creates a corresponding DBMS schema (1214) in the corresponding DBMS catalog to hold the corresponding information. (Spec. 19, l. 29 through Spec. 20, l. 2; Spec. 20, ll. 14-16.) The process (1200) processes each relational schema (1216) in the CWM independently to produce the information for the corresponding DBMS schema for the relational database. (Spec. 20, ll. 2-5; Spec. 20, l. 16; Spec. 20, ll. 21-24.)

Illustrative Claim

Independent claim 1 further illustrates the invention as follows:

1. A method comprising:

converting physical aspects of a common warehouse model (CWM) to corresponding database management system (DBMS) items in a relational database by processing in a hierarchical manner the physical aspects and creating the corresponding DBMS items, the physical aspects comprising relational catalogs, the relational catalogs comprising relational schemas, the corresponding DBMS items comprising DBMS catalogs, the DBMS catalogs comprising DBMS schemas, wherein converting comprises the operations of:

(a) scanning through the relational catalogs;

(b) for a first of the relational catalogs, creating a corresponding first DBMS catalog in the relational database;

(c) for each of the relational schemas in the first relational catalog, creating a corresponding DBMS schema in the corresponding DBMS catalog to hold corresponding information; and

(d) processing each of the relational schemas to produce corresponding information for the corresponding DBMS schema.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatenability:

Kumpon Farpinyo & Twittie Senivongse, Designing and Creating Relational Schemas with a CWM-Based Tool, 456-61 (2002) ("Farpinyo").

Rejections on Appeal

The Examiner rejects the claims on appeal as follows:

Claims 21 and 23 through 40 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 1, 3 through 21, 23 through 41, and 43 through 60 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Farpinyo.

Appellants' Contentions

1. Appellants argue that independent claim 21 is directed to statutory subject matter because it is limited to a machine-accessible storage medium. (App. Br. 12.)

2. Appellants argue that Farpinyo does not disclose, either expressly or inherently, the hierarchical methodology of converting the generated CWM relational metadata to a database schema for a specified DBMS. (App. Br. 15.) In particular, Appellants contend that the actual conversion operations claimed are not taught by Farpinyo because the CWM-based tool is merely capable of converting CWM relational metadata to database schema. (App. Br. 16-17.)

Examiner's Contentions

1. The Examiner avers that independent claim 21 is directed to non-statutory subject matter because Appellants' Specification indicates that a machine accessible medium includes a computer signal embodied in a

carrier wave or a signal modulated by a carrier over a transmission medium. (Ans. 21.)

2. The Examiner finds that Farpinyo's disclosure of a CWM-based tool that supports the creation of ER diagrams, transformation into CWM format, and creation of database schemas for relational database management systems teaches hierarchically converting physical aspects of a CWM to corresponding DBMS items in a relational database, as recited in independent claim 1. (Ans. 21-25.)

II. ISSUES

1. Have Appellants shown that the Examiner erred in finding that a machine accessible medium, as recited in independent claim 21, is directed to non-statutory subject matter?

2. Have Appellants shown that the Examiner erred in finding that Farpinyo teaches the hierarchical conversion operations for converting physical aspects of a CWM to corresponding DBMS items in a relational database, as recited in independent claim 1?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are supported by a preponderance of the evidence:

Appellants' Invention

1. The information in the CWM is usually represented by ER diagrams and the physical aspects are represented by relational elements in the relational design process where the end product is the structure of the database itself. (Spec. 6, ll. 18-22.) The following ER terms (logical) are in

descending hierarchical order and have near equivalents in the relational world (physical): 1) model library is equivalent to catalog; 2) model is equivalent to schema; 3) entity is equivalent to table; and 4) attribute is equivalent to column. (Spec. 6, ll. 22-26.)

2. "Programs or code segments can be stored in a processor or machine accessible medium or transmitted by a computer data signal embodied in a carrier wave, or a signal modulated by a carrier, over a transmission medium." (Spec. 10, ll. 20-23.) "The 'processor readable or accessible medium' or 'machine readable or accessible medium' may include any medium that can store, transmit, or transfer information." (Spec. 10, ll. 23-25.)

Farpinyo

3. The CWM-based tool, or ER2CWM, supports the creation of ER diagrams, the transformation of ER diagrams into CWM format, and the creation of database schemas for relational database management systems. (Abstract, ll. 8-10.)

4. ER2CWM is composed of numerous modules, including a DBMS information module. (Page 459, ll. 1, 8.) The DBMS information module creates database schemas from CWM Relational metadata, reads in existing database schemas to create CWM Relational metadata and ER diagrams, and maintains information about database management systems ("DBMSes") and ER2CWM, *i.e.* Structured Query Language ("SQL") data types and database commands for creating and reading schema. (Page 459, ll. 8-13.)

5. ER2CWM is a database design tool that creates relational schemas with an enhancement to support CWM Relational metadata. (Page 461, ll. 6-7.)

IV. PRINCIPLE OF LAW

Statutory Subject Matter

Our reviewing court has recently held that transitory, propagating signals, such as carrier waves, are not within any of the four statutory categories (process, machine, manufacture or composition of matter). Therefore, a claim directed to computer instructions embodied in a signal is not statutory under 35 U.S.C. § 101. *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

Claim Construction

"[T]he words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citations omitted). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313 (citations omitted).

"[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)). Our reviewing court has repeatedly warned against confining the

claims to specific embodiments described in the specification. *Phillips v. AWH Corp.*, 415 F.3d at 1323.

Anticipation

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992)). "Anticipation of a patent claim requires a finding that the claim at issue 'reads on' a prior art reference." *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed Cir. 1999) (internal citations omitted). "In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art." *Id.* (citation omitted).

V. ANALYSIS

Issue #1

Independent claim 21 recites in relevant part an article of manufacture comprising a machine accessible medium.

As set forth above, Appellants' Specification defines a machine accessible medium as any medium that can store, transmit, or transfer information, including a computer data signal embodied in a carrier wave or a signal modulated by a carrier over a transmission medium. (FF 2.) We

find that independent claim 21 encompasses the use of a computer data signal embodied in a carrier wave to store, transmit, or transfer information. A computer data signal embodied in a carrier wave is a transitory, propagating signal not within any of the four statutory categories, and is therefore non-statutory. *See In re Nuijten*, 500 F.3d at 1357. It follows that Appellants have not shown that the Examiner erred in rejecting claim 21 as being directed to non-statutory subject matter.

Appellants have not separately argued claims 23 through 40. Consequently, claims 23 through 40 stand and fall with claim 21. 37 C.F.R. § 41.37(c)(1)(vii).

Issue #2

Independent claim 1 recites in relevant parts:

> [C]onverting physical aspects of a CWM to corresponding DBMS items in a relational database by processing in a hierarchical manner the physical aspects and creating the corresponding DBMS items . . . wherein converting comprises the operations of: . . .
> (b) for a first of the relational catalogs, creating a corresponding first DBMS catalog in the relational database;
> (c) for each of the relational schemas in the first relational catalog, creating a corresponding DBMS schema in the corresponding DBMS catalog to hold corresponding information.

As set forth in the Finding of Facts section, Farpinyo's abstract discloses a CWM-based tool that supports the creation of ER diagrams, the transformation of ER diagrams into CWM format, and the corresponding creation of database schemas for database management systems. (FF 3.) Farpinyo discloses that the CWM-based tool consists of numerous modules, including a DBMS information module. (FF 4.) The DBMS information

module utilizes SQL data types and database commands for creating and reading database schemas from CWM Relational metadata. (FF 4.) In a nutshell, Farpinyo's disclosed CWM-based tool is a design tool that creates relational schema. (FF 5.)

We find that the CWM-based tool of Farpinyo designs and creates schema. However, Farpinyo's disclosure is ambiguous with regards to whether the schema created is a relational schema, a database schema, or both. At best, Farpinyo appears to disclose a CWM-based tool capable of creating database schema without expressly teaching the hierarchical conversion of relational catalogs to corresponding DBMS catalogs and relational schemas to corresponding DBMS schemas. Thus, while Farpinyo's disclosure of a CWM-based tool can design and create relational schema, it is silent on the specific steps for converting the physical aspects of a CMW to corresponding DBMS items in a hierarchical manner, as required by claim 1. In particular, we find nothing in Farpinyo that expressly or inherently teaches for a first of the relational catalogs, creating a corresponding first DBMS catalog in the relational database. Nor does Farpinyo disclose for each of the relational schemas in the first relational catalog, creating a corresponding DBMS schema in the corresponding DBMS catalog to hold corresponding information. Therefore, we agree with Appellants that Farpinyo does not teach the hierarchical conversions of relational catalogs to corresponding DBMS catalogs and relational schemas to corresponding DBMS schemas, as required by claim 1. It follows that Appellants have shown that the Examiner erred in finding that Farpinyo anticipates claim 1.

Because claims 3 through 21, 23 through 41, and 43 through 60 also recite the hierarchical conversions of relational catalogs to corresponding DBMS catalogs and relational schemas to corresponding DBMS schemas, we find for the same reasons that Appellants have shown error in the Examiner's rejection of these claims.

VI. CONCLUSIONS OF LAW

1. Appellants have not shown that the Examiner erred in finding that claims 21 and 23 through 40 are directed to non-statutory subject matter under 35 U.S.C. § 101.

2. Appellants have shown that the Examiner erred in finding that claims 1, 3 through 21, 23 through 41, and 43 through 60 are anticipated under 35 U.S.C. § 102(b).

VII. DECISION

1. We affirm the Examiner's decision rejecting claims 21 and 23 through 40 as being directed to non-statutory subject matter under 35 U.S.C. § 101.

2. We reverse the Examiner's decision rejecting claims 1, 3 through 21, 23 through 41, and 43 through 60 as being anticipated under 35 U.S.C. § 102(b).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFRIMED-IN-PART

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